REMARKS

Claims 1-13 and 15-18 remain in the application. Reconsideration is respectfully requested for claims 1-13 and 15-18 in view of the following remarks.

It is noted that the application has been pending in the U.S. Patent Office for nearly seven years. In this time, nine Office Action have issued, including eight non-final rejections and one final rejection which was withdrawn after Applicants' filing of a Notice of Appeal.

With due respect, in view of the irrelevance of the art cited in rejecting claims of the application, it is requested that the claims pending in the application be allowed and the case advanced to issue.

Claims 1-11 have been rejected under 35 USC 102(b) as being anticipated by newly cited McGee et al. U.S. Patent no. 5,722,403, the Examiner alleging that McGee et al. disclose a system and method for imaging interior tissue regions utilizing an electrode assembly.

This rejection is respectfully traversed since McGee neither shows nor suggests the claimed probe adaptable for detecting magnetic resonance signals as defined by claim 1. Claim 1 specifically recites at least first and second electrodes positionable on or within an object in proximity to a region of interest, distal ends of electrodes being spaced apart and disconnected, the electrodes being functional with the conducting medium as a coil for detecting magnetic resonance signals.

The use of a coil for detecting electro magnetic signals, and in particular electromagnetic flux passing through the coil, is to be distinguished from a unipolar electrode for radiating energy or bipolar electrodes for transmitting energy between electrodes such as suggested in the embodiment of the McGee et al patent, described in column 24 and 25, and referenced by the Examiner. Further, the descriptions of the uni-polar and bipolar modes of operations are directed primarily to the transmission of ablation energy for the removal of tissue by means of heat generated by the transmitted energy from a single electrode (unipolar) or between two electrodes (bipolar) .

McGee et al. do describe the use of a probe for image acquisition (IAE) beginning in column 6 at line 55, but it will be noted that the imaging described is ultrasonic imaging (column 7, line 5), fiber optic imaging (column 8, line 3) and other imaging (column 8, line 25) such as optical coherence tomography (OCT).

The only reference to magnetic resonance imaging that the undersigned attorney could locate begins in column 19, line 65 and extending into column 20 which refers to using external imaging techniques such as magnetic resonance imaging. This is clearly contrasted with the use

of an internal ablation probe discussed by McGee, or the claimed probe positionable within an object in which two electrodes function as a coil in receiving signals.

The invention is relatively simple in concept in the use of separate electrodes which can be positionable in proximity to a region of interest, such as for example, under the knee cap for imaging the patella cartilage, as illustrated in Fig. 5 of Applicant's drawings, in which the two electrodes are functional with conducting medium as a coil for detecting magnetic resonance signals. As described in the specification, the invention has allowed much improved imaging capability when compared to the conventional use of surface coils for imaging the knee.

The undersigned attorney respectfully submits that McGee et al. do not disclose first and second electrodes positional within an object in proximity to a region of interest, distal ends of the electrodes be spaced apart and disconnected, the electrodes being functional with the conducting medium as a coil for detecting magnetic resonance signals. Should the Examiner persist in applying the McGee reference, the Examiner is respectfully requested to specifically identify first and second electrodes positionable, the distal ends of the electrodes being spaced apart and disconnected, the electrodes being functional with a conducting medium as a coil for detecting magnetic resonance signals. It is respectfully requested that the Examiner not refer to passages in the McGee patent and make generalizations as to their disclosure.

For the foregoing reasons, it is respectfully submitted that claims 1-11 are patentable under 35 USC 102(b) and 103 over McGee et al.

Claim 12 has been rejected under 35 USC 103(a) as being unpatentable over McGee et al. in view of Crowley et al. 6,004,269, the Examiner again alleging that McGee et al. disclose all claimed features but fail to disclose the probe wherein the electrodes comprise needles. The Examiner refers to Crowley et al. for teaching an imaging system with electrodes mounted on the distal portion of a catheter, the electrodes comprising needles.

This rejection is respectfully traversed for the reasons given above for the patentability of claims 1-11 over McGee et al. McGee et al do not show or suggest the claimed probe for detecting magnetic resonance signals.

The Examiner refers to Crowley et al. column 28, line 37 through column 29, line 28 as teaching the use of electrodes comprising needles. However, Crowley et al. teach their needles as functioning for impaling the surface of the heart and injecting chemicals such as ethanol into the heart. In column 29, Crowley et al. state that the catheter can be put into position in the heart with the needle retracted through use of ultrasound visualization. Relevance of the Crowley et al. injection needle to the McGee et al. ablating system is not seen to the undersigned attorney. However, any such use of a needle for impaling a surface and injecting chemicals in the ablation

system of McGee et al. would surely not suggest the probe coil adaptable for detecting magnetic resonance signals as defined by claim 12.

Claims 13 and 16-18 have been rejected under 35 USC 103(a) as being unpatentable over McGee et al. in view of previously cited Glowinski et al. U.S. Patent number 5, 868, 674, the Examiner again alleging that McGee et al. disclose a method of imaging a region of interest including a conducting medium, the Examiner stating that McGee et al. do not disclose the step of placing an object in a static magnetic field. The Examiner refers to Glowinski et al. as teaching a device that includes an MR device which is placed in a static magnetic field as described by Applicant.

This rejection is respectfully traversed since McGee et al. neither shows nor suggests the claimed invention. The Examiner refers to column 12, line 7-30 along with the previously referenced column 24 and column 25 as teaching such electrodes. However, the description in column 12 describes transmitting electrodes as comprising spaced apart lengths of closely wound, spiral coils wrapped about a sleeve. Again, such electrodes are functionable in a uni-polar or bipolar mode but cannot function as coils for receiving magnetic resonance signals.

As previously noted, the Glowinski catheter is not a signal detector and the Glowinski conductor loop cannot have spaced apart and disconnected ends as claimed, since the Glowinski device generates a magnetic field and requires a completed circuit connected to a power supply 17. Clearly, Glowinski et al. are not practicing a method of imaging where magnetic resonance signals are detected with at least two space electrodes in proximity to a region of interest, distal ends of electrodes being spaced apart and disconnected, as claimed.

Claim 15 has been rejected under 35 USC 103(a) as being unpatentable over McGee et al. in view of Glowinski and further in view of Crowley et al.

This rejection is respectfully traversed for the reasons given above for the patentability of claim 12, from which claim 15 depends. Further, the Glowinski et al. reference is irrelevant as noted above.

Since claims 1-11 are patentable under 35 USC 102(b) and 103 over McGee et al., since claim 12 is patentable under 35 USC 103(a) over McGee et al. in view of Crowley et al., since claims 13 and 16-18 are patentable under 35 USC 103(a) over McGee et al. in view of Glowinski et al., and since claim 15 is patentable over McGee et al. in view of Glowinski et al and Crowley et al., all as above set forth, it is requested that claims 1-13 and 15-18 be allowed and the case advanced to issue.

Should the Examiner have any question or suggestion concerning this response and response, a telephone call to the undersigned attorney is requested.

Respectfully submitted,
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